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October 10, 1995

By Hand

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Re: Third Notice of Proposed Rulemaking and
Supplemental Tentative Decision
CC Docket No. 92-297, PP-22

Dear Mr. Caton:

On behalf of CellularVision, enclosed please find an original and five (5) copies of its Reply Comments filed in the above-referenced proceeding.

Please direct any questions regarding this matter to the undersigned.

Sincerely,

Michael R. Gardner
Counsel for CellularVision

Enclosures

cc Attached Service List

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services	)	CC Docket No. 92-297
and	)	
Suite 12 Group Petition for Pioneer's Preference	)	PP-22

REPLY COMMENTS OF CELLULARVISION

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October 10, 1995

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SUMMARY

For three years, the Commission has committed substantial time and resources to the 28 GHz Rulemaking, which has resulted in a reasoned 28 GHz band segmentation plan that will promote the deployment of a variety of new competing video, voice, data and interactive services for the consumers in this country. The vast majority of commenters, representing both the U.S. satellite industry and proponents of Local Multipoint Distribution Service ("LMDS") technology, support the Commission's 28 GHz plan as outlined in the Third Notice of Proposed Rulemaking that was adopted by a unanimous Commission on July 13, 1995. Those commenters, including LMDS pioneering inventor CellularVision, generally expressed the desire for more 28 GHz spectrum for their proposed services, but ultimately supported the Commission's proposed 28 GHz plan because it provides regulatory certainty that will allow the Fixed Satellite Services ("FSS"), Mobile Satellite Services ("MSS") and LMDS to deploy their diverse competitive services without further delay.

Regulatory certainty is a vital element of the Commission's 28 GHz band plan. For CellularVision and the LMDS community, the prompt adoption of the Commission's 28 GHz band plan will allow the nationwide licensing of LMDS in 1996 through spectrum auctions — auctions being applauded by the 104th Congress as it seeks to reduce the burdensome federal deficit through the robust use of all spectrum, including the largely fallow 28 GHz band.

For the numerous satellite interests who have sought regulatory certainty in the 28 GHz spectrum, they now have that assurance which will allow a variety of systems

to go forward, if the public wants them and if financing and technical hurdles are overcome. Like LMDS and PCS licensees, would-be satellite system providers of 28 GHz based services should also have to pay for their spectrum, whether obtained at auction or through some alternative payment system that insures that the burden of reducing the federal deficit is shared equally by all high tech commercial entities seeking to serve the consumers while realizing profit through their use of the 28 GHz band.

At long last, the Commission has completed all of its procedural and substantive tasks in the 28 GHz Rulemaking. The Commission now has before it a voluminous and compelling public policy and technical record that supports its proposed 28 GHz band plan. There is no need for more regulatory delay — as further delay is a hungry predator for the new forms of vigorous competition that LMDS licensees are immediately poised to offer in video, voice, data and interactive services. The Commission must firmly rebuff those seeking more delay, whether it is delay based on a wasteful resurfacing of the moribund 40 GHz issue, or the hysterical suggestions that the 1995 World Radiocommunication Conference ("WRC-95") will seek to retroactively bar fixed terrestrial services already globally allocated in the 28 GHz spectrum.

The now fallow but enormously valuable 28 GHz spectrum is immediately ready for use by LMDS, and possibly, in the near term and long term, it will also be utilized for satellite services. The Commission's 28 GHz band plan accommodates all of these diverse services and guarantees each industry — be it FSS, MSS or LMDS service

providers — the chance to serve the public and succeed commercially if their 28 GHz-based service proves to be attractive to, and needed by, the public.

The only remaining hurdle now to unleashing these disparate competitive technologies is for the Commission to reaffirm its 5-0 vote in support of the 28 GHz band plan, and formally adopt that reasoned, pro-competitive band plan at the Commission's December 1995 meeting. Any further delay is unwarranted and can only frustrate the public interest, the Congress and those entrepreneurs who welcome the vigorous competition inherent in the Commission's 28 GHz band plan.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services	)	CC Docket No. 92-297
and	)	
Suite 12 Group Petition for Pioneer's Preference	)	PP-22

REPLY COMMENTS OF CELLULARVISION

CellularVision[TMSM], by its attorneys, hereby files Reply Comments in response to the Third Notice of Proposed Rulemaking and Supplemental Tentative Decision ("Third NPRM") (FCC 95-287) in the above-referenced proceeding. Since the overwhelming majority of commenters in this proceeding support the Commission's proposals in the Third NPRM, CellularVision urges the Commission to promptly conclude this Rulemaking with the adoption of a Report and Order consistent with the Third NPRM and to commence with the nationwide licensing of Local Multipoint Distribution Service ("LMDS") in the 28 GHz band through spectrum auctions.

Prompt action in the licensing of LMDS after years of delay will introduce an important new wireless technology for U.S. consumers that will provide high-quality,

low-cost video competition to cable, while also introducing new LMDS-based telephony, data and interactive services into the U.S. communications marketplace. Prompt action by the Commission in adopting a Report and Order finalizing its 28 GHz band plan also will advance the public interest and the goals of the 104th Congress by generating billions of deficit reducing dollars for the federal treasury through spectrum auctions of LMDS and satellite licenses.

I. Band Segmentation Proposal

In view of the contentious nature of the protracted 28 GHz Rulemaking, CellularVision[1] believes it is significant that an overwhelming number of parties from the disparate industries participating in this proceeding generally support the FCC's proposed 28 GHz band segmentation plan. Importantly, the warring competitive entities in the 28 GHz Rulemaking who now collectively support the Commission's reasoned compromise 28 GHz band plan include Teledesic Corporation, Hughes Communications Galaxy, Inc., The Boeing Company and Loral Aerospace Holdings,

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[1] For purposes of this document, references to "CellularVision" include the following related companies which are majority owned and controlled by common principals: Suite 12 Group, whom the Commission has found to be the innovator of Local Multipoint Distribution Service in the 27.5-29.5 GHz band, and for which the Commission has twice tentatively awarded a pioneer's preference (see Notice of Proposed Rulemaking, Order, Tentative Decision and Order on Reconsideration ("First NPRM"), CC Docket No. 92-297, 8 FCC Rcd 557 (1993); Third NPRM); CellularVision Technology and Telecommunications, Inc., which holds the patent for Suite 12's 28 GHz LMDS technology, the CellularVision technology; and CellularVision of New York, L.P., which operates a commercial LMDS video service as an alternative to cable television in the New York Primary Metropolitan Statistical Area in the 27.5-28.5 GHz band pursuant to a commercial license granted by the Commission in 1991. See Hye Crest Management, Inc., 6 FCC Rcd 332 (1991).

Inc. from the Fixed Satellite Service ("FSS") community; Motorola Satellite Communications, Inc., Iridium, Inc. and TRW, Inc. from the Mobile Satellite Service ("MSS") industry; Bell Atlantic Corporation, Pacific Telesis Wireless Broadband Services, NYNEX Corporation, BellSouth Corporation, Ameritech and Northern Telecom, Inc. from the Regional Bell Operating Company segment of the U.S. telephone industry; LMDS interests, who in addition to CellularVision, the pioneer of LMDS, include Texas Instruments, ComTech Associates, Inc., Hewlett-Packard Company, RioVision, Inc., and Titan Information Systems Corporation; Cox Enterprises, Inc., Comcast Corporation and Jones Intercable, Inc. from the cable television industry; and public interest parties such as The Association of America's Public Television Stations, Public Broadcasting Service and the law firm of Duncan, Weinberg, Miller and Pembroke, P.C., which represents about one hundred state and local governmental entities throughout the United States.

Many of the parties who now support the FCC's 28 GHz band plan, including CellularVision, state that they would have preferred more spectrum for their respective services; however, these parties from disparate segments of the U.S. communications marketplace nonetheless support the reasoned compromise that the FCC worked painstakingly to craft based on a compelling and legally sustainable record. In agreeing to support the Commission's compromise 28 GHz band plan, the LMDS industry has made substantial concessions, including acquiescing to the Commission's current proposed LMDS spectrum allocation plan that halves the Commission's prior proposal from two LMDS licenses of 1 GHz each in the 28 GHz band in the First

NPRM to a total allocation to LMDS of 1 GHz noncontiguous (850 MHz plus 150 MHz) in the 28 GHz band in the Third NPRM. Additionally, under the Commission's current plan, CellularVision, which is commercially licensed to use the 27.5-28.5 GHz band in the New York PMSA, will be required to relinquish its right to use the 28.35-28.50 GHz portion of its licensed spectrum in three years or when an FSS system is commercially launched and operational in that spectrum, whichever is later. However, in an effort to avoid further delay and order to provide competitive LMDS services nationwide, CellularVision supports the Commission's 28 GHz band plan as this compromise plan should advance the deployment of LMDS services nationwide as expeditiously as possible. Accordingly, based on this nearly universal support now in the record for the Commission's 28 GHz band plan, the Commission should reject any further attempts to delay this proceeding and the Commission should adopt its 28 GHz band plan as proposed no later than its December 1995 public meeting.

In particular, the Commission should reject the efforts of several satellite proponents who, while indicating general support for the Commission's band plan, suggest "minor changes" to the plan that, upon closer examination, are actually transparent attempts to defeat the Commission's commitment to the vigorous nationwide deployment of LMDS in the 28 GHz band. One of the most glaring examples of these disingenuous attempts to derail the robust deployment of LMDS in the 28 GHz band is Teledesic Corporation's ("Teledesic") recommendation that the Commission establish a "local priority designation" for LMDS in 27.5-28.35 GHz spectrum instead of amending the Table of Allotments to specify a primary designation

for LMDS.[2] Teledesic's argument that this will assist the United States in its negotiations at the upcoming 1995 World Radiocommunication Conference ("WRC-95") is a transparent and offensive red herring; there simply is no rational basis for the Commission to move away from a standard allocation of 28 GHz spectrum for LMDS on a primary basis in favor of the bogus "local priority designation" in the 27.5-28.35 GHz band urged by Teledesic. Teledesic's frivolous proposal would only serve to denigrate the primary LMDS allocation intended by the Commission; moreover, the uncertain stigma of a "local priority designation" would surely stunt investor interest in LMDS and jeopardize the development of LMDS nationwide.

Hughes Communications Galaxy, Inc.'s ("Hughes") regressive suggestion that the Commission reconsider an earlier band plan recommendation of Hughes if NGSO/MSS and GSO/FSS determine that they cannot share the 29.25-29.5 GHz segment of the band should also be rejected.[3] Hughes's plan would provide two noncontiguous blocks of 500 MHz for LMDS, at 27.5-28.0 GHz and 29.0-29.5 GHz, in contrast to the Commission's proposed allocation to LMDS of 850 MHz at 27.5-28.35 GHz and 150 MHz at 29.1-29.25 GHz. Hughes's plan would also increase the burden on both LMDS and MSS operators, as it expands the amount of spectrum that would be co-primary between these services from 150 MHz in the Commission's more equitable plan, to 500 MHz in Hughes's plan. Hughes's effort to resuscitate its self-

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[2] See Comments of Teledesic, CC Docket No. 92-297, September 7, 1995, p.6.

[3] See Comments of Hughes, CC Docket No. 92-297, September 7, 1995, p. 23.

serving band segmentation proposal is flawed for a number of reasons.

First, the Commission should note that those few parties who initially supported Hughes's plan, Teledesic, The Boeing Company and Texas Instruments, each filed comments in support of the Commission's band plan, so the limited support which initially existed for Hughes's plan has evaporated. Additionally, leading LMDS proponents have consistently maintained that an LMDS operator needs 1 GHz of contiguous spectrum to be a viable competitive service. Hughes's claim that it does not increase costs for an LMDS operator to use non-contiguous spectrum blocks is flatly wrong,[4] and is contradicted by Hughes's own admission that "there is no reason to think that the use of non-contiguous spectrum blocks is any more expensive for LMDS systems than it is for satellite systems."[5] The increase in cost of using non-contiguous spectrum blocks is precisely the reason Hughes and Teledesic have proposed to operate links in single, contiguous blocks of spectrum. Even satellite proponent Loral Aerospace Holdings, Inc. ("Loral Aerospace") recognizes the cost increases that would accompany the operation of links in fragmented spectrum,[6] which is true whether the system in question is LMDS or satellite.

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[4] In support for its position, Hughes includes a hasty and flawed assessment attached as Exhibit 1 to its Comments that recycles outdated arguments already rejected by the Commission in developing its proposed band segmentation plan. For example, Hughes and Stanford Telecom rely on a hypothetical European system configuration for the 40 GHz band, a design which has yet to be implemented in Europe and which has been rejected by LMDS proponents because of its irrelevance to 28 GHz LMDS and its inherent flaws.

[5] Comments of Hughes, supra note 3, at p. 24.

[6] See Comments of Loral Aerospace, CC Docket No. 92-297, September 7, 1995, p. 3.

In the spirit of compromise and in order to expedite the nationwide licensing of LMDS and prevent several more years of administrative and judicial litigation, CellularVision and other LMDS proponents have agreed to the Commission's proposed allocation of 1 GHz non-contiguous, from 27.5-28.35 GHz and 29.1-29.25 GHz. Anything less, however, is unacceptable. Hughes's proposed two non-contiguous 500 MHz blocks for LMDS which has already been appropriately rejected by the Commission may work for telephony and data services — albeit at higher costs — but it will not allow LMDS operators to offer competitively priced, high-quality video service.

Moreover, under the Hughes scheme, as noted above, one of the 500 MHz blocks, representing one-half of the LMDS spectrum provided under its 28 GHz band plan, would be encumbered by sharing with MSS feeder links. As CellularVision and other LMDS proponents have explained,[7] LMDS proponents agreed to the LMDS/MSS sharing protocol in the Negotiated Rulemaking because it encumbered only 400 MHz of the 2000 MHz allocation for LMDS then being proposed by the Commission. Now, however, with the Commission proposing to halve the total LMDS spectrum allocation to only 1 GHz, Hughes's plan is totally unacceptable and would hobble the deployment of LMDS as a competitive video alternative to cable.

The Commission should also reject Loral Aerospace's request that the proposed

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[7] See e.g., Comments of CellularVision, CC Docket No. 92-297, September 7, 1995, p.4; Comments of BellSouth, CC Docket No. 92-297, September 7, 1995, pp. 4-5; Joint Comments of the Association of America's Public Television Stations and Public Broadcasting Service, CC Docket No. 92-297, September 7, 1995, p. 8, n.10.

band plan be modified to give FSS 1.25 GHz of contiguous spectrum. Loral Aerospace fails to offer a valid reason why the Commission's carefully crafted compromise band plan should be altered to award FSS additional spectrum, and it fails to offer any explanation for locating the additional spectrum it seeks for FSS. As CellularVision noted in its Comments in the Third NPRM, the proposed FSS systems are demonstrably inferior to LMDS with regard to frequency re-use efficiency in system design. Specifically, LMDS can reuse its allocated spectrum more than 57,000 times in the continental U.S., while Teledesic claims frequency reuse "at least" 350 times over the same area and Hughes Spaceway would reuse its spectrum only 24 times over the continental U.S.[8] NASA states that its own analysis for CONUS coverage of an FSS system shows that frequencies would be reused only about three (actually 20/7) times.[9] Given these two examples, FSS is inferior to LMDS in frequency reuse efficiency by a factor of 2,375 to 19,000 — hardly a strong argument for allocating additional spectrum to the spectrum-wasteful theoretical FSS systems, particularly at the expense of the spectrum efficient, proven LMDS.

Moreover, in opposing the Commission's proposal to conduct spectrum auctions for satellite services, the satellite proponents have uniformly argued that never in the history of the Commission has there been a mutual exclusivity situation for FSS.[10] Given this representation, and further given the fact that the orbital arc is wide open

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[8] See Comments of CellularVision, supra note 7, at p. 31.

[9] See Comments of NASA, CC Docket No. 92-297, September 7, 1995, p.6.

[10] See e.g. Comments of Hughes, supra note 3, at p. 33.

for 28 GHz FSS systems, the 1000 MHz of spectrum made available to FSS in the Commission's proposed band plan should be more than enough spectrum to accommodate all credible FSS applicants, further confirming the basis for the Commission to reject Loral Aerospace's plea for additional 28 GHz spectrum for FSS.

CellularVision further urges the Commission to reject the empty, rehashed arguments of the handful of parties who completely oppose the Commission's comprehensive 28 GHz band plan, as none of these parties has presented any evidence to contradict the overwhelming sound technical and policy-based support in the record for the Commission's band plan. For example, PanAmSat Corporation ("PanAmSat"), which argues that the FCC should reserve the entire 28 GHz band for satellite services, at the same time recognizes the potential public interest benefits of LMDS and provides no basis for the Commission to exclude LMDS from the band.[11]

Likewise, GE American Communications, Inc.'s ("GE Americom") self-serving suggestion that the Commission eliminate the need for NGSO/MSS and GSO/FSS to share the 29.25-29.5 GHz spectrum by instead designating MSS feeder links as co-primary with LMDS in 27.5-28.35 pursuant to the Motorola agreement should be rejected by the Commission.[12] In view of the encumbrance to LMDS from sharing with MSS feeder links, if LMDS is saddled with the burden of sharing with MSS

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[11] See Comments of PanAmSat, CC Docket No. 92-297, September 7, 1995, p.2 (recognizing that "LMDS systems may someday prove to be a valuable source of competition to existing local exchange carriers or cable operators").

[12] See Comments of GE Americom, CC Docket No. 92-297, September 7, 1995, p.14.

systems throughout its entire 1 GHz allocation in the 28 GHz band pursuant to the terms of the agreement with Motorola, LMDS simply will not be viable.

The Commission should also reject GE Americom's proposal that an FSS gateway site operating on a secondary basis to LMDS in the 27.5-28.35 GHz band which is coordinated with an LMDS system would not have to be terminated if an LMDS operator subsequently added a station in the gateway's potential interference zone.[13] The Commission has proposed that LMDS be primary in the 27.5-28.35 GHz band, and GE Americom's proposal would in effect reverse the primary LMDS and secondary FSS allocations by creating a protection zone around FSS gateway terminals. Moreover, under GE Americom's approach, once FSS gateway sites are coordinated with an LMDS operator, any new LMDS subscribers located in an FSS gateway's potential interference zone would have to accept any interference from the gateway. Much like GE Americom's misplaced attempt to persuade the Commission to encumber the entire LMDS spectrum with a requirement to share with MSS feeder links, GE Americom's attempt to create a protection zone for FSS gateway terminals authorized to operate on a secondary basis only in a band allocated to LMDS on a primary basis is technically an absurdity and would have the practical effect of making LMDS the Edsel of new communications technologies.

Based on the insistence of FSS proponents throughout this Rulemaking proceeding that their systems would cause interference to LMDS systems, the FCC should make it clear that in order to operate a gateway station on a secondary basis

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[13] See id., p.18.

in the 27.5-28.35 GHz band, an FSS proponent first would have to demonstrate that it would not cause interference to the operations of the primary user in that band, the LMDS licensee; moreover, if such FSS operations ever did cause interference to the primary user, LMDS, the FSS operator would have the burden to resolve that interference or cease operations. As the Commission prudently recognized, LMDS needs adequate spectrum on a primary basis to be a viable, competitive technology. The proposed allocation of 850 MHz from 27.5-28.35 GHz, and 150 MHz from 29.1-29.25 GHz, was carefully developed and well supported in the record. Nothing that GE Americom offers in the record, then and now, alters the Commission's reasoned compromise plan developed for LMDS.

Despite the desire of the satellite industry throughout this proceeding to hoard the 28 GHz band for possible use in the future, the Third NPRM makes it abundantly clear that the Commission is committed to maximizing the efficient use of spectrum through the shared use of the 28 GHz band by LMDS, FSS and MSS, and to providing consumers with the benefits of the new competitive services that both terrestrial and satellite services in the 28 GHz band may offer. In view of the proven numerous public interest benefits which LMDS in the 28 GHz band is immediately poised to offer, it would be contrary to the public interest, inconsistent with the Commission's statutory mandate to maximize the efficient use of the spectrum[14] and contrary to the will of the 104th Congress to generate federal deficit reducing revenues from spectrum auctions for the Commission to set aside the entire 28 GHz band for

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[14] See 47 U.S.C. §151 et seq.

proposed satellite use possibly sometime in the future.

In regard to spectrum auctions of the valuable yet largely fallow 28 GHz spectrum, the satellite industry would like to receive exclusive use of the entire 28 GHz band without any payment or auction fee. The Commission can no longer allow a few specious naysayers to inhibit the robust deployment of a competitive new service like LMDS in the 28 GHz band — a valuable public resource that can be aggressively utilized by LMDS based on the Commission's 28 GHz band plan.

The Commission should also reject the opposition to the band plan by the Telecommunications Industry Association ("TIA") and other fixed point-to-point microwave proponents, consisting of Harris Corporation-Farinon Division ("Harris"), Digital Microwave Corporation ("DMC"), Alcatel Network Systems, Inc. and Telephone and Data Systems, Inc., who complain that the 28 GHz plan does not include a separate allocation for point-to-point microwave service. In the Third NPRM the Commission appropriately rejected the request of Harris and DMC for a separate allocation for point-to-point microwave use of the 28 GHz band, concluding that the public interest in support of the myriad of LMDS services proposed in this proceeding outweighs the public interest in point-to-point services.[15] The Commission also stated that entities interested in providing point-to-point services in the 28 GHz band could apply for LMDS licenses, or seek geographic partitioning, spectrum disaggregation and/or spectrum lease opportunities.[16]

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[15] See Third NPRM, para. 52.

[16] See id., para. 53.

The Commission also confirmed that sufficient point-to-point spectrum is available elsewhere, and in fact the point-to-point proponents never have demonstrated in this proceeding that other point-to-point microwave allocations are inadequate to meet industry needs. None of these parties have ever cited an example of even a single microwave user whose needs could not be met because of spectrum congestion, and they have provided no data showing that the density of microwave usage at 18, 23 or 38 GHz is anywhere close to exceeding capacity. Careful engineering will continue to allow a huge number of point-to-point microwave links in those bands to be engineered into a small area without interference.[17]

TIA's proposal to further segment the 28 GHz band into "LMDS Backbone Link Service" is inconsistent with the needs of LMDS operators and is an arbitrary attempt to obtain spectrum. LMDS licensees should be free to use any portion of their spectrum for backbone links, as long as the primary underlying purpose of the allocation — distribution — is not impaired. A licensee's choice of which frequencies within its licensed allocation to use for backbone links will depend on the technology employed, the Commission's final decision on how many LMDS licenses will be awarded per service area, the location of MSS feeder link stations and a variety of other factors. TIA should not be allowed to dictate a spectrum plan for LMDS.

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[17] CellularVision does not object to a co-primary allocation for point-to-point microwave in the bands allocated solely for satellite earth stations. Traditional frequency coordination will allow point-to-point microwave and satellite earth stations to coexist. This would not impose any additional burden on the satellite industry, which must undertake frequency coordination for each individual earth station because the 18.55-19.30 and 19.45-19.7 GHz downlink bands are already shared with point-to-point microwave users.

In considering the unpersuasive assertions of those few parties who would alter or derail the Commission's reasoned 28 GHz compromise band plan, the Commission should strengthen its commitment to its proposal as articulated in the Third NPRM. As the record demonstrates, an enormous commitment of Commission resources was carefully dedicated to creating a compromise amongst the various services competing for access to the 28 GHz band. Clearly, while every industry with a stake in this proceeding would like more spectrum, including the LMDS industry, the Commission has developed a reasoned compromise which, based on the general support of the overwhelming majority of commenters, succeeds in providing each industry seeking spectrum in the 28 GHz band with just enough spectrum to deploy their services in a competitive yet spectrum efficient fashion that ultimately could fully utilize the now fallow 28 GHz spectrum. Because of the documented legal and technical soundness of the record in this proceeding, the Commission should expeditiously adopt its proposed 28 GHz band segmentation plan and the attendant rules that will finally make LMDS a reality for U.S. consumers nationwide.

II. 40 GHz: Not An Option For LMDS

The Commission must also reject the unpersuasive, unproductive and redundant efforts of NASA and Lockheed Martin Corporation ("Lockheed") who try to rehash the debunked satellite effort to evict LMDS from the 28 GHz band to the 40 GHz band.[18]

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[18] See Comments of NASA, supra note 9, pp. 9-13; Comments of Lockheed, CC Docket No. 92-297, September 7, 1995, pp.2-3. Likewise, TRW Inc.'s ("TRW") and GE Americom's suggestions that 40 GHz provides an alternative for LMDS if the

NASA, obviously acting as a surrogate once again for many of its vendors from the commercial satellite industry, and Lockheed both blindly ignore the ample record already compiled by the Commission which confirms the appropriateness of the 28 GHz band for LMDS. Once again, NASA and Lockheed fail to introduce any new or compelling information into the record, and totally ignore the Commission's appropriate rejection of the satellite industry's coordinated effort over the past few years to exile LMDS to the 40 GHz band. In the Third NPRM, the Commission correctly "conclude[d] that the 40 GHz band is not suitable for LMDS as proposed in this docket."[19] NASA and Lockheed also ignore the technically significant and persuasive filings of numerous LMDS proponents who have demonstrated in the record in this proceeding and in ET Docket No. 94-124 that LMDS would not be commercially viable at 40 GHz.

As CellularVision has demonstrated in the record, based on significant differences in signal propagation characteristics, component technology and system implementation, the cost of providing LMDS service at 40 GHz would be significantly more expensive than the cost at 28 GHz, thus rendering 40 GHz LMDS commercially unviable.[20] Similarly, Texas Instruments, the proponent of an LMDS system design, has concluded that

[t]he 40 GHz band is not technically and operationally comparable with

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28 GHz sharing issues cannot be worked out must be rejected.

[19] Third NPRM, para. 36.

[20] See Reply Comments of CellularVision, ET Docket No. 94-124, March 1, 1995, pp.2-3.

> 28 GHz operation as claimed by the FSS proponents. There are significant differences in both the equipment requirements, in their design, and in LMDS system deployment and operation at 40 GHz that would have substantial economic impact.[21]

Texas Instruments further stated that

> [t]he rain fall differences between Europe and the United States is different enough such that any comparison of operational similarities at 40 GHz in the two geographical regions is irrelevant.[22]

Titan Information Systems Corporation ("Titan"), a leading equipment manufacturer for the satellite, cable, video dialtone, MMDS and LMDS industries, also recognized that

> [m]oving LMDS [to 40 GHz] . . . would . . . completely eliminate LMDS as a competitive alternative to cable for the delivery of multi-channel television, telephony and other information services. This unintended result would clearly not be in the public interest.[23]

Likewise, Bell Atlantic Corporation ("Bell Atlantic") has stated in the record that

> forcing a move [of LMDS] to the above 40 GHz bands, as urged by the satellite interests, would severely undermine the viability of LMDS as a competitive service.[24]

Additionally, mm-Tech, Inc. ("mm-Tech"), a manufacturer of LMDS infrastructure equipment and a member of the 28 GHz Negotiated Rulemaking Committee, has explained that

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[21] Comments of Texas Instruments, ET Docket No. 94-124, February 27, 1995, p.9.

[22] Id.

[23] Reply Comments of Titan, ET Docket No. 94-124, March 1, 1995, Summary at i (emphasis in original).

[24] Reply Comments of Bell Atlantic, ET Docket No. 94-124, March 1, 1995, p.5.

> [i]f the FCC is persuaded that LMDS in the U.S. should be shifted to the 40 GHz band it is likely that the U.S. will either end up with a system with inferior performance at higher cost that does not match systems deployed world wide, or more likely, be left with no LMDS at all.[25]

Despite the persistent efforts of NASA and the satellite industry to obfuscate the true facts, the Multipoint Video Distribution Service ("MVDS") proposed by the CEPT for the 40 GHz band is not the equivalent of, nor as commercially versatile and attractive as 28 GHz LMDS. For example, MVDS is a limited capacity (20-32 video channels), one-way video service designed to operate in Northern Europe's climate dominated by drizzle.[26] By contrast, the Commission appropriately recognizes that 28 GHz LMDS is a dynamic broadband two-way service capable of offering a diverse range of services including video services in competition to cable television, telephone service in competition to local exchange service carriers, data services, teleconferencing, telemedicine and other services.[27]

Notwithstanding the hyperbole offered by NASA and its few commercial allies and vendors in the satellite industry about the alleged viability of LMDS at 40 GHz, it is significant to note that there are no commercial systems currently operational at 40 GHz. The proposed Eurobell MVDS system in the United Kingdom, often cited by satellite proponents to support their claim that LMDS is viable at 40 GHz, has yet to even apply for an experimental license to operate the wireless portion of its proposed

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[25] Reply Comments of mm-Tech, ET Docket No. 94-124, February 28, 1995, p.3.

[26] See Reply Comments of CellularVision, supra note 20, at pp.13-14.

[27] See Third NPRM, para. 3.

hybrid coaxial/wireless video distribution service.[28] As Texas Instruments has appropriately observed, "[t]he European community has recognized the limitations associated with operation at 40 GHz as is evident from the lack of commercial 40 GHz systems in Europe today."[29]

In sum, NASA and Lockheed's attempt to resuscitate the weak 40 GHz issue and force this intellectually vacant argument back into this proceeding is no more of a "win-win" solution now than it was when it was previously raised by the satellite industry and appropriately rejected by the Commission. Rather, NASA's and Lockheed's renewed efforts to substitute the 40 GHz band for the 28 GHz band for LMDS is merely another transparent attempt by some misguided interests to kill LMDS as a competitive technology that can vigorously utilize the 28 GHz spectrum and go toe-to-toe with various satellite services if the 28 GHz band is allocated consistent with the Commission's proposed band plan. Based on the voluminous record already before the Commission disproving the 40 GHz myth, the Commission should reject the self-serving and frivolous attempts by NASA, Lockheed, GE Americom and TRW to exile LMDS from the 28 GHz band to the 40 GHz band.[30]

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[28] Eurobell's 1994 application requests a "technologically neutral franchise license," and with its proposed hybrid wire-based and wireless system, proposes to serve only 20 percent of its total franchise area, or 19,000 homes, with a limited, one-way local MVDS system. See Reply Comments of CellularVision, supra note 20, at pp.14-15.

[29] See Comments of Texas Instruments, supra note 21, at p.9.

[30] NASA's claim that the 150 MHz from 29.1-29.25 GHz to be shared by LMDS and MSS feeder links is sufficient spectrum for LMDS based on a belief that digital technology will allow for 105 video channels in 150 MHz lacks all credibility. See Comments of NASA, supra note 9, at n.29. As CellularVision and other LMDS

III. Supplemental Tentative Decision on CellularVision's Pioneer's Preference Application

The vast majority of parties who commented on the subject of CellularVision's pioneer preference and its current commercial license for the New York PMSA support the Commission's reasoned and equitable decision to:

(1) renew CellularVision's commercial license to serve the New York PMSA, subject to the condition that CellularVision may continue to operate in the 28.35-28.5 GHz portion of the spectrum until three years from the release date of the Report and Order in this proceeding, or when a GSO/FSS satellite is successfully launched and put into commercial service using that spectrum, whichever is later;

(2) permit CellularVision, at the end of this grandfathering period, and upon ceasing operations in the 28.35-28.5 GHz spectrum, to simultaneously be licensed to operate on a co-primary basis in the 29.1-29.25 GHz spectrum;

(3) grant CellularVision a pioneer's preference license for the New York BTA, with CellularVision licensed to use the 27.5-28.35 GHz and 29.1-29.25 GHz blocks of spectrum in the portion of the BTA outside of the New York PMSA already licensed to CellularVision; and

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proponents have maintained throughout this proceeding, an LMDS operator needs a minimum of 1 GHz of bandwidth to compete today with coaxial and hybrid coaxial-fiber-based video delivery systems, both of which utilize a minimum of 1 GHz of bandwidth. See infra, n.36. Thus, providing LMDS with only a 150 MHz slice of spectrum in the 28 GHz band is fundamentally misplaced, particularly since NASA's reliance on digital compression technology today to turn that sliver of spectrum into a viable broadband LMDS industry flies in the face of the evidence in the record in this proceeding regarding the increasing pessimism in the industry about the advent of digital compression technology. See Comments of CellularVision, supra note 7, at n.18. While CellularVision acknowledges that digital technology is under development and that it may someday become cost effective to employ in LMDS, importantly, however, such technology is not commercially viable today. A further basis for rejecting NASA's proposal to reduce the LMDS allocation to only the 150 MHz from 29.1-29.25 GHz is that pursuant to the proposed LMDS/MSS sharing rule LMDS would be secondary in large geographic areas in up to eight service areas in the country, and the rule prohibits LMDS subscriber-to-hub links in that spectrum. Clearly, under NASA's approach, LMDS would not even be a shadow of the diverse, competitive interactive service the Commission envisions.